

## CLAIMS

1. A method for decoding a turbo-coded code word comprising termination bits, the method comprising
  - storing received code word samples in a memory for decoding,
  - 5       applying the samples to a decoder in a sequence required by the code structure,
  - grouping termination samples according to different code word components,
  - extending one or more interleavers of the code such that the
  - 10       extension part comprises addresses of systematic termination samples corresponding to termination samples of one or more parity components associated with each interleaver and addresses of extrinsic weight coefficients related to said systematic termination samples,
  - forming an address of ascending order after the samples of the
  - 15       actual code word such that the addresses of the extension part are ascending-order addresses of the extrinsic weight coefficients or of systematic termination samples corresponding to termination samples of one or more parities, and
  - 20       executing decoding by using extended ascending address formation or one or more extended interleavers.
2. A method as claimed in claim 1, where in the systematic termination samples corresponding to the termination samples and of the different parity components are placed in a memory after the systematic samples of the actual code word.
- 25       3. A method as claimed in claim 1, where in the extrinsic weight coefficients corresponding to the termination samples and of the different parity components are placed in a memory after the extrinsic weight coefficients of the actual code word.
4. A method as claimed in claim 1, where in the ascending order
- 30       and one or more interleavers are extended such that each extension part designates the places of the systematic samples of the termination component of the code word and those of the extrinsic weight coefficients in the same order as the termination is executed.
5. A method as claimed in claim 1, where in the termination
- 35       samples of the different parity components are grouped in the memory immediately after the actual parity samples.

6. A method as claimed in claim 1, where in the systematic termination samples corresponding to the termination samples of the different parity components are at the end of the samples of the systematic component in the successive order by groups according to each parity component.

5 7. A method as claimed in claim 1, where in the systematic termination samples corresponding to the termination samples of the different parity components are grouped at the end of the samples of the systematic component such that the systematic samples of the ascending order corresponding to the termination samples of one or more parities come first  
10 and thereafter the systematic samples of each interleaver corresponding to the termination samples of one or more parities grouped according to the parity components.

8. A method as claimed in claim 7, where in the memory of the extrinsic weight coefficients is grouped in the same manner as the memory of  
15 the systematic samples, the termination part included.

9. An arrangement for decoding a turbo coded code word comprising non-interleaved termination bits, the arrangement comprising  
a memory for storing received code word samples,  
means for reading the samples into a decoder in a sequence  
20 required by the code structure,  
means for grouping the termination samples according to different components of the code word,

means for extending one or more interleavers of the code such that the extension part comprises addresses of systematic termination samples  
25 corresponding to termination samples of one or more parity components associated with each interleaver and addresses of extrinsic weight coefficients related to said systematic termination samples,

means for forming an address of ascending order after the samples of the actual code word such that the addresses of the extension part are  
30 ascending-order addresses of the extrinsic weight coefficients or of systematic termination samples corresponding to termination samples of one or more parities, and

means for executing the decoding by using the extended ascending address formation and one or more extended interleavers.

35 10. An arrangement as claimed in claim 9, the arrangement further comprising means for placing the systematic termination samples

corresponding to the termination samples and of the different parity components in the memory after the systematic samples of the actual code word.

11. An arrangement as claimed in claim 9, the arrangement further  
5 comprising means for placing the extrinsic weight coefficients corresponding to the termination samples and of the different parity components in the memory after the extrinsic weight coefficients of the actual code word.

12. An arrangement as claimed in claim 9, the arrangement further  
10 comprising means for extending one or more interleavers of the code such that each extension part designates the locations of the systematic samples of the termination component of the code word and those of the extrinsic weight coefficients in the same order as the termination is executed.

13. An arrangement as claimed in claim 9, the arrangement further  
15 comprising means for arranging the termination samples of the different parity components in the memory immediately after the actual parity samples.

14. An arrangement as claimed in claim 9, the arrangement further  
comprising means for arranging in the memory the systematic termination  
samples corresponding to the termination samples of the different parity  
components at the end of the samples of the systematic component in the  
20 successive order by groups according to each parity component.

15. An arrangement as claimed in claim 9, the arrangement further  
comprising means for arranging the systematic termination samples  
corresponding to the termination samples of the different parity components at  
the end of the samples of the systematic component grouped such that the  
25 systematic samples of the ascending order corresponding to the termination  
samples of one or more parities come first and thereafter the systematic  
samples of each interleaver corresponding to the termination samples of one  
or more parities grouped according to the parity components.

16. An arrangement as claimed in claim 15, the arrangement further  
30 comprising means for arranging the memory of the extrinsic weight coefficients in the same manner as the memory of the systematic samples, the termination component included.